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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,477	09/29/2005	Marco Nahmias Nanni	07040.0211	3884

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EXAMINER
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FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
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1791

MAIL DATE	DELIVERY MODE
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12/21/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/522,477	<b>Applicant(s)</b> NAHMIAS NANNI ET AL.	
	<b>Examiner</b> Justin R. Fischer	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,6,10-13,15,16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,6,10-13,15,16 and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 48-80, 83-88, and 90-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumiyoshi (JP 2000-086824) and further in view of Exxon Mobil Chemical, Hawley Dictionary (of record), and Takeuchi (US 5,498,735, of record).

Sumiyoshi is directed to a tire construction formed of a composition comprising a diene-based rubber, a modified paraffin wax, and an olefin resin, wherein said resin can be Escorez® 1102 (Paragraph 9- see attached translation). Exxon Mobil Chemical has been applied to expressly evidence the C5/C6 makeup of Escorez® 1102 (Page 13- inherent chemical structure). In this instance, though, the references are completely silent as to whether the olefin resin system of Sumiyoshi is an alpha olefin resin system. In any event, one of ordinary skill in the art at the time of the invention would have found it obvious to form the olefin of Sumiyoshi as an alpha olefin since it represents one of the most common, if not the most common, form of an olefin resin. It is noted that Hawley's Dictionary includes a description of an alpha olefin under the definition of "olefin" and Takeuchi recognizes the common use of alpha olefins when forming similar material additives (plasticizers, surface active agents) (Column 1, Lines 5-15). These references clearly suggest that one of ordinary skill in the art at the time of the invention

would have found the general language of Sumiyoshi as including alpha olefins. It is emphasized that "alpha olefins" represent one of the most common, if not the most common, structure of olefin resins and applicant has not provided a conclusive showing of unexpected results to establish a criticality.

Regarding claim 49, the reference (Sumiyoshi) further teaches a loading for the wax between 0.5 and 10 phr (based on base rubber) and a loading for the olefin resin between 1 and 10 phr (based on base rubber). Using these values, the amount of olefin resin can vary between 0.1 and 20 times that of the wax, which fully encompasses the range of the claimed invention. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the composition of Sumiyoshi with the claimed quantitative relationship since the reference describes a plurality of embodiments that satisfy the broad range of the claimed invention.

With respect to claims 49, 83-87, 92, and 93, the claimed tire materials are consistent with those conventionally used tire compositions. It is further noted that the compositions of Sumiyoshi are described as being usable in tire and having a high degree of ozone resistance- such language is commonly used when describing tire components that are exposed to the environment, such as the tread and the sidewall. As such, one of ordinary skill in the art at the time of the invention would have found it obvious to form the sidewall and/or tread of Sumiyoshi from the above noted composition. Lastly, the claimed materials are consistent with those commonly used to manufacture sidewalls and/or treads.

As to claims 51-55, Escorez ® 1102 has a number average molecular weight of approximately 890 (Page 26- inherent property of Escorez ® 1102).

With respect to claims 56-58, Escorez ® 1102 has a polydispersity index of 2.7 (Page 26- inherent property of Escorez ® 1102).

Regarding claims 59 and 60, Escorez ® 1102 has a softening point of 100 °C (Page 26- inherent property of Escorez ® 1102).

As to claims 61-68, 71, and 72, Sumiyoshi generally teaches a tire rubber composition including a petroleum hydrocarbon resin at a loading between 1 and 10 phr. Although not expressly disclosed by Sumiyoshi, such hydrocarbon resins and additional resins are commonly described as being substituted or unsubstituted, branched or unbranched, and being saturated or having at least one degree of unsaturation. One of ordinary skill in the art at the time of the invention would have found it obvious to use a wide variety of hydrocarbon resins in the rubber composition of Sumiyoshi, including those that satisfy the broad range of parameters required by the claimed invention. It is emphasized that the claimed limitations in regards to branching, saturation, and cyclic moieties are consistent with the well known and conventional manner in which hydrocarbon resins are described and applicant has not provided a conclusive showing of unexpected results to establish a criticality for any of the claimed formulations. It is noted that Table 1 simply compares a composition devoid of polymer (c) and a composition having polymer (c)- these results do not establish a criticality for the specific use of any one type of hydrocarbon resin.

With respect to claims 67 and 68, the claims as currently drafted do not require branching of quaternary carbon atoms (lower end of range is 0 percent).

Regarding claims 69 and 70, it is well recognized that higher degrees of crystallinity are associated with higher softening points. In this instance, Escorez<sup>®</sup> 1102 has a relatively high softening point and as such, one of ordinary skill in the art at the time of the invention would have expected the hydrocarbon resin to demonstrate a crystallinity in accordance to the broad range of the claimed invention. It is further noted that Sumiyoshi is more broadly directed to the general class of petroleum hydrocarbon resins and such a disclosure would include a wide variety of resins having crystallinities in accordance to the broad range of the claimed invention.

With respect to claims 75-78 and 90, the modified paraffin wax of Sumiyoshi contains a lower molecular weight fraction B1 and a high molecular weight fraction B2. In this instance, (a) the lower molecular weight fraction is formed of compounds having between 24 and 29 carbon atoms and has a branched hydrocarbon content between 10 and 15 weight percent and (b) the higher molecular weight fraction is formed of compounds having between 32 and 38 carbon atoms and has a branched hydrocarbon content between 18 and 25 weight percent. This language suggests a linear saturated hydrocarbon content that satisfies the broad ranges of the claimed invention (between 85 and 90 weight percent of B1 is linear saturated hydrocarbon having 24-29 carbon atoms and between 75 and 82 weight percent of B2 is linear saturated hydrocarbon having 32-38 carbon atoms).

As to claims 79 and 80, the composition of Sumiyoshi includes paraffin wax (modified) at a loading between 0.5 and 10 phr, which fully encompasses the broad range of the claimed invention.

3. Claims 81, 82, and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumiyoshi, Exxon Mobil Chemical, Hawley's Dictionary, and Takeuchi as applied in claims 48 and 88 above and further in view of Jorgensen (US 4,207,218, of record). While Sumiyoshi is silent as to the specific base rubber component, the claimed values for the glass transition temperature are consistent with the values associated with common rubber formulations, as shown for example by Jorgensen (Column 2, Lines 15-45). It is emphasized that several of the disclosed rubbers are well recognized as being used in the tire industry. One of ordinary skill in the art at the time of the invention would have found it obvious to form the base rubber of Sumiyoshi from a material having a glass transition temperature below 20 degrees Celsius.

### ***Response to Arguments***

4. Applicant's arguments filed December 4, 2007 have been fully considered but they are not persuasive.

As correctly argued by applicant, it is unclear whether or not Escorez ® 1102 is an alpha-olefin or a non-alpha olefin. However, the tire construction of Sumiyoshi is not limited to the use of Escorez ® 1102- Escorez ® 1102 represents an exemplary olefin resin system (see paragraph 9 of machine translation). The reference more broadly teaches the use of a hydrocarbon resin (olefin) to function as a tackifier in the rubber

composition. The particular selection of an alpha-olefin resin would have been well within the purview of one of ordinary skill in the art at the time of the invention since such resins (alpha olefins) represent one of the most common, if not the most common, form of an olefin resin. As detailed above, Hawley's Dictionary includes a description of an alpha olefin under the definition of "olefin" and Takeuchi recognizes the common use of alpha olefins when forming similar material additives (plasticizers, surface active agents) (Column 1, Lines 5-15). **These references clearly suggest that one of ordinary skill in the art at the time of the invention would have found the general language of Sumiyoshi as including alpha olefins.** It is emphasized that "alpha olefins" represent one of the most common, if not the most common, structure of olefin resins and applicant has not provided a conclusive showing of unexpected results to establish a criticality.

It is further noted that applicant even recognizes the limited number of possibilities for the location of the C=C double bond (Page 3 of Arguments submitted on July 13, 2007). Given such a limited construction and the well known and common use of alpha olefin resin systems, one of ordinary skill in the art at the time of the invention would have found it obvious to form the olefin resin system of Sumiyoshi as an alpha olefin resin system.

In regards to Takeuchi, applicant argues that the reference fails to suggest the use of alpha-olefins as tackifiers. However, as noted above, the reference evidences the common use of alpha olefins when forming similar material additives (plasticizers, surface active agents). It is particularly noted that plasticizers and tackifiers are



extremely similar in that they are commonly categorized together as tire additives (separate from base rubber and carbon black). Thus, the reference evidences the known use of alpha olefins in material additives that are extremely similar to the tackifier of Sumiyoshi.

In regards to alpha olefins and non-alpha olefins, Sumiyoshi is completely silent as to the preferred use of either olefin type resin. A fair reading of the Sumiyoshi suggests the general use of a hydrocarbon resin (olefin resin), which includes both alpha olefin resins and non-alpha olefin resins. It is emphasized that there is nothing in Sumiyoshi to suggest an inferior tire construction using an alpha olefin resin. It is further noted that Table 1 only compares compositions with and without an alpha olefin resin and thus, the results to demonstrate a criticality for the use of an alpha olefin (as compared to a non-alpha olefin). It is suggested that applicant compare compositions having alpha olefins and non-alpha olefins to demonstrate a criticality for the claimed olefin resin.

In regards to Escorez ® 1102, the applicable rejection does not involve the modification of this additive to form an alpha olefin resin and thus, the question as to whether such a modified resin would be capable of functioning as a tackifier is not relevant. As detailed above, Escorez ® 1102 is an exemplary olefin resin- in view of the general disclosure of Sumiyoshi, one of ordinary skill in the art at the time of the invention would have found it obvious to use a wide variety of olefin resins, including alpha olefin resins. It is additionally noted that the reference is completely silent as to whether Escorez ® 1102 is an alpha olefin or non-alpha olefin and thus, the disclosure

of Sumiyoshi does not teach away from the use of an alpha olefin resin. It is emphasized that alpha olefin resins represent one of the most common, if not the most common, forms of an olefin resin and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the use of such an olefin resin.

Lastly, in regards to claims 61-72, 75-78, and 90, a fair reading of the reference suggests the use of a wide variety of hydrocarbon resins (olefins). More particularly, hydrocarbon resins and additional resins are commonly described as being substituted or unsubstituted, branched or unbranched, and being saturated or having at least one degree of unsaturation. One of ordinary skill in the art at the time of the invention would have found it obvious to use a wide variety of hydrocarbon resins in the rubber composition of Sumiyoshi, including those that satisfy the broad range of parameters required by the claimed invention. It is emphasized that the claimed limitations in regards to branching, saturation, and cyclic moieties are consistent with the well known and conventional manner in which hydrocarbon resins are described and applicant has not provided a conclusive showing of unexpected results to establish a criticality for any of the claimed formulations. It is noted that Table 1 simply compares a composition devoid of polymer (c) and a composition having polymer (c)- these results do not establish a criticality for the specific use of any one type of hydrocarbon resin.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Justin R Fischer  
Primary Examiner  
Art Unit 1791

JRF  
December 19, 2007